

of the Southeast; seasonal work was well up in general, with corn being planted as far north as southern Oklahoma and central Arkansas. Light to moderate rains were beneficial in Ohio Valley sections and local precipitation was received in the droughty Southwest, but over a considerable area moisture was badly needed. Some snow remained in the northern Spring-Wheat Belt, but considerable plowing and disking were accomplished in the south and a little spring wheat was sown in northwestern Iowa. Conditions were generally favorable in the Cotton Belt and much preparation of the soil for planting was done; seeding continued in Texas. Vegetation advanced rapidly during the week, and fruit trees were showing color northward to the lower Ohio Valley.

During the last decade cold weather retarded the growth of vegetation and slowed up farm work generally. The coolness was especially marked in the central valley States and the South, with considerable harm to tender vegetation and some damage to fruit bloom as far north as parts of the Ohio Valley. Precipitation was beneficial locally in the Southwest, but moisture was still needed over much of the area, especially in Oklahoma and adjoining States. Low temperatures and dry soil were unfavorable for winter wheat in this area, but snows were helpful in the Ohio Valley. Preparations for planting in the Corn Belt were largely inactive due to wetness, coolness, and frozen soil in the northern part, while in the more southern sections little work was done. Very little cotton was put in during the period; preparation of seed beds had been retarded, but this work was generally well up. Progress of cotton was poor in Texas and much seed lost, due to unfavorable weather for germination.

Small grains.—During the first decade there were still reports of unfavorable freezing and thawing in the Ohio Valley and condition of winter wheat varied widely there. Mostly satisfactory advance was made in the western portions of the belt, except that rain would have helped in Kansas and other parts of the Southwest. Favorable conditions continued in the South and East. Plowing and spring oat sowing had advanced to the Ohio Valley. During the second decade condition of winter wheat con-

tinued to vary widely in the Ohio Valley and but little change was noted in the more western parts of the belt; moisture was locally beneficial in Kansas, with but little damage noted from soil blowing. The general condition of the crop remained largely unchanged in most of the South, East, and Northwest. Plowing and disking for oats progressed northward to South Dakota, with oats put in as far north as southern Iowa and Nebraska and a little spring wheat seeded locally in Iowa and southern South Dakota. During the last decade winter wheat was benefited by snow in the western Ohio Valley and the crop was holding up well. In the central and southwestern parts of the belt precipitation was badly needed, with marked deterioration appearing in south-central and western Kansas. Winter cereal crops did well in the East, but in the Northwest a need of moisture was again apparent. Some oats were put in during the period, but spring wheat seeding was retarded by frozen ground in places. Oats made only slow growth in the Southeast and the soil was generally too dry and cold for proper germination of seed.

Miscellaneous crops.—Pastures and meadows greened up rapidly in the East during the first two decades, but the cold weather the latter part of the month generally stopped growth. In the great western grazing sections conditions were mostly favorable, with feeding light throughout and the range furnishing some feed. Generous to heavy rains in parts of the far Southwest were highly beneficial. Some slight shrinkage occurred toward the close of the month, but livestock were favored generally, with lambing proceeding satisfactorily.

There was some frost damage to tender varieties of truck during the first and last decades, especially in the Florida Peninsula early in the month, when local injury occurred south to the Miami district. Gardens and truck did well in most sections, however, with the warmth during the middle period especially favorable in helping overcome the effects of the frosts. Some slight injury to fruit trees and bloom was reported during the cold weather, but favorable retardation was reported from many parts.

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

The most unusual feature of the weather over the North Atlantic during March was the unequal distribution of gales, as the number of days in which they occurred was very much below the normal over the northern section, and equal to or above over the southern. Up to time of writing gales have not been reported on more than 1 day in any 5° square north of the fiftieth parallel, while between the thirtieth and thirty-fifth parallels and twentieth to sixtieth meridians they occurred on from 2 to 6 days, the maximum being in the square immediately north of the Azores.

As shown in Table 1, the average monthly pressure at stations on the American coast north of Hatteras was considerably below normal, while on the British Isles the negative departures were comparatively small.

Fog was observed in different localities as follows: Over the Grand Banks, from 9 to 14 days; along the American coast between Hatteras and Nova Scotia, from 6 to 8 days; in the Gulf of Mexico, from 1 to 3 days; in the vicinity of the Azores, from 1 to 2 days; and on not more

than 1 day in any 5° square east of the thirty-fifth meridian.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, March, 1930

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland.....	29.82	(1)	30.32	15th....	29.36	11th.
Belle Isle, Newfoundland.....	29.66	-0.14	30.34	8th.....	28.84	21st.
Halifax, Nova Scotia.....	29.69	-0.27	30.36	1st.....	28.94	3d.
Nantucket.....	29.78	-0.24	30.34	15th....	29.28	19th.
Hatteras.....	29.92	-0.18	30.32	15th....	29.21	8th.
Key West.....	29.99	-0.09	30.18	27th 4	29.76	8th.
New Orleans.....	30.04	-0.05	30.44	3d.....	29.52	7th.
Cape Gracias, Nicaragua.....	29.92	-0.06	29.98	1st 4	29.82	7th. 4
Turks Island.....	30.07	+0.05	30.24	1st.....	29.96	16th.
Bermuda.....	29.99	-0.15	30.24	1st.....	29.70	9th.
Lisboa, Azores.....	30.04	-0.08	30.58	11th....	29.46	20th.
Lerwick, Shetland Islands.....	29.67	-0.03	30.50	1st.....	29.06	29th.
Valencia, Ireland.....	29.82	-0.08	30.50	1st.....	29.08	15th.
London.....	29.87	-0.09	30.50	5th.....	29.17	16th.

¹ No normal available.

² From normals shown on Hydrographic Office Pilot Charts, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.

³ From normals based on 8 a. m. observations.

⁴ And on other date or dates.

Charts VIII to XI cover the period from the 1st to 4th, inclusive, when heavy weather prevailed over the middle and western sections of the ocean.

On the 5th a severe disturbance was central about 400 miles south of the Azores, with a secondary low about the same distance south of St. Johns, Newfoundland, while anticyclonic conditions prevailed over the British Isles.

On the 6th and 7th a depression, that on the latter date was central in western Kentucky, extended as far south as the Gulf of Mexico, with barometric readings on the 7th of 29.52 inches at both New Orleans and Pensacola. On the 8th New York, with a reading of 29.08 inches, was near the center of this low, and on that day as well as the 9th westerly gales prevailed along the American coast, between the twenty-fifth and fortieth parallels.

From the 10th to 12th the Azores high and Icelandic low were both well developed, and during that period northerly to westerly gales occurred between the twenty-fifth meridian and European coast.

From the 13th to 15th a low was over the western section of the ocean that reached its greatest intensity on the 14th, with westerly winds of force 7 to 9 between the thirty-fifth and fortieth parallels and fiftieth to sixtieth meridians; on the 15th northerly gales also occurred over the steamer lanes between the twentieth and thirtieth meridians.

On the 18th and 19th, the central section of the ocean was covered by a disturbance that on the former date extended from the thirtieth to forty-fifth parallels. On the 20th the center of this low was about 300 miles north of the Azores, where strong westerly gales prevailed.

On the 22d Belle Isle, Newfoundland, was near the center of a deep low, with westerly winds of force 7 to 9 between the fortieth and forty-fifth parallels. From the 23d to 25th moderate weather was the rule over the ocean as a whole, although a few vessels reported winds of force 7 and 8 during this period.

On the 26th and 27th a depression was over Maine and the Province of Quebec, with resultant westerly gales along the coast from Hatteras to Nantucket. On the 26th there was also a low central near 50° N., 35° W. that moved slowly eastward, and on the 28th was off the coast of Ireland, the storm area then extending from the fortieth to fifty-fifth parallels, and tenth to twenty-fifth meridians.

A depression that on the 29th was central near 50° N., 40° W., developed later into the most severe disturbance of the month, and on the 30th the steamer lanes east of the fifty-fifth meridian were swept by moderate to strong westerly gales. By the 31st the disturbance had contracted somewhat in extent but increased in intensity, as vessels between the Azores and fiftieth parallel on that date, encountered winds of hurricane force, as shown by reports in storm table.

OCEAN GALES AND STORMS, MARCH, 1930

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Mercer, Am. S. S.	Liverpool	Boston	45 55 N	39 05 W	Mar. 1	—, 1	Mar. 2	29.65	NNW	NNW, 7	NNW	NNW, 10	Steady.
Calgarolite, Br. M. S.	Lobitos, Peru	Halifax	36 36 N	66 41 W	Mar. 2	8 a, 2	Mar. 3	29.43	S	SSW, 8	NW	NW, 9	SW-W-NW.
Tomalva, Am. S. S.	Rotterdam	Boston	46 20 N	40 38 W	do.	1 a, 2	Mar. 2	29.80	NNW	NNW, 9	N	NNW, 10	NNW-N.
Julius Schindler, Ger. M. S.	Curacao	Hamburg	43 14 N	26 16 W	Mar. 1	Noon, 2	do.	29.41	SSE	S, —	WSW	—, 10	S-WSW.
Texas, Am. S. S.	Philadelphia	Boston	41 42 N	69 45 W	Mar. 2	7 a, 3	Mar. 3	29.21	NW	WNW, 10	NW	WNW, 10	NW-WNW.
Kentuckian, Am. S. S.	Canal Zone	New York	29 41 N	74 40 W	Mar. 3	2 p, 3	Mar. 4	29.79	NW	NW, 9	NW	NW, 9	WNW-NNW.
Ossining, Am. S. S.	Algiers	Baltimore	34 32 N	52 57 W	do.	4 a, 4	do.	29.56	SW	W, 10	W	W, 10	SW-W.
Grete, Ger. S. S.	Hamburg	Savannah	40 00 N	24 00 W	Mar. 4	4 p, 4	Mar. 6	29.61	Var	ESE, 6	NNW	NNE, 10	E-N-NW.
Darian, Br. S. S.	Liverpool	Boston	42 09 N	45 54 W	Mar. 5	8 a, 5	do.	29.83	WSW	WSW, —	NW	—, 10	WSW-W-NW.
St. Joseph, Fr. S. S.	Bordeaux	Pointe-a-Pitre	32 45 N	27 28 W	Mar. 4	3 p, 5	Mar. 7	29.49	NNW	NNW, 11	N	NNW, 11	Steady.
Gulfking, Am. S. S.	Charleston	Port Arthur	30 30 N	80 30 W	Mar. 7	9 a, 7	do.	29.38	S	S, 8	S	—, 10	S-W.
Ossining, Am. S. S.	Algiers	Baltimore	36 07 N	71 55 W	Mar. 8	1 a, 8	Mar. 8	29.16	S	S, 10	W	S, 10	S-W.
Edgemoor, Am. S. S.	Houston	Havre	36 20 N	72 15 W	Mar. 9	10 p, 9	Mar. 10	29.39	NNW	NNW, 7	NNW	NNW, 9	NNW-W.
Frederik VIII, Dan. S. S.	Oslo	Halifax	56 50 N	18 33 W	Mar. 10	4 a, 10	do.	29.65	WNW	WNW, 6	W	—, 9	Steady.
Spidoleine, Belg. M. S.	Amsterdam	Galveston	49 05 N	6 13 W	do.	4 p, 10	Mar. 13	29.67	NNW	NNW, 7	WNW	NNW, 10	Steady.
Exford, Am. S. S.	Lisbon	New York	37 10 N	64 30 W	Mar. 12	6 p, 12	do.	29.66	SSW	W, 7	W	W, 9	SW-WNW.
Scorsby, Br. S. S.	Marmagao	Hamburg	48 30 N	5 30 W	Mar. 9	3 a, 12	Mar. 12	29.46	WNW	WNW, 9	N	NNW, 10	W-WNW.
Silverbelle, Br. M. S.	Port Said	New York	36 18 N	49 30 W	Mar. 13	9 p, 13	Mar. 15	28.53	W	W, 10	NW	—, 10	W-WNW.
McKeesport, Am. S. S.	New York	Havre	48 55 N	18 30 W	do.	4 a, 13	do.	28.98	NNW	N, 7	NE	NW, 10	N-E.
Hellig Olav, Dan. S. S.	do.	Christiansand	54 29 N	24 22 W	Mar. 14	4 p, 15	do.	29.41	N	N, 6	ENE	N, 10	N-E.
Wytheville, Am. S. S.	Antwerp	New York	44 28 N	45 45 W	Mar. 18	Noon, 18	Mar. 20	28.82	SSW	NNE, 7	W	NW, 11	N-E.
Reventazon, Br. S. S.	Puerto Castilla	Bremerhaven	39 00 N	65 00 W	do.	9 p, 19	Mar. 19	29.46	SSW	NW, —	NW	W, 12	WSW-NW.
Berlin, Ger. S. S.	Bremerhaven	New York	44 13 N	40 19 W	do.	—, 19	do.	29.07	SW	WSW, 12	NW	—, 12	SW-WNW
Exarch, Am. S. S.	New York	Gibraltar	38 15 N	21 40 W	Mar. 20	4 p, 20	Mar. 21	29.24	WSW	WSW, 9	NW	W, 10	SW-W.
Eaton, Br. M. S.	Falmouth	Halifax	47 09 N	37 09 W	Mar. 22	11 p, 22	Mar. 22	29.49	SSW	S, 9	W	S, 10	SE-W.
Florence Luckenbach, Am. S. S.	Canal Zone	New Orleans	27 02 N	88 13 W	Mar. 25	3 a, 25	Mar. 25	29.83	NW	NW, 7	W	WNW, 9	WNW.
Waukegan, Am. S. S.	New York	Havre	47 05 N	29 00 W	Mar. 29	4 p, 29	Mar. 31	29.38	WSW	WSW, 8	NNW	NW, 12	SSW-WNW.
Novian, Br. S. S.	Liverpool	Boston	42 55 N	39 47 W	Mar. 30	6 p, 30	do.	28.94	SW	WSW, —	NW	W, 12	SSW-SW.
West Madaket, Am. S. S.	Stettin	Mobile	40 05 N	27 45 W	do.	2 p, 31	Apr. 1	29.40	SW	WSW, —	W	—, 11	SSW-SW.
NORTH PACIFIC OCEAN													
Choyo Maru, Jap. S. S.	Seattle	Yokohama	55 00 N	168 02 W	Feb. 28	6 p, 28	Mar. 1	28.39	SE	S, 10	WSW	S, 10	SSW-WNW
Yukon, Am. S. S.	do	Seward	At Seward, Alaska	do.	do.	7 p, 28	Mar. 2	29.45	SE	SE, —	NW	SE, 10	SSW-WNW
Tecumseh, Br. S. S.	San Pedro	Nagasaki	32 34 N	165 00 E	Mar. 2	10 a, 2	do.	29.45	SE	SSW, 12	NW	WSW, 12	SSW-WNW
Nebraska, Am. S. S.	Los Angeles	New York	13 18 N	94 35 W	do.	9 p, 2	Mar. 3	29.98	NE	—, 8	N	—, 8	SE-SW
Wisconsin, Am. S. S.	Portland	Shanghai	51 26 N	170 55 W	do.	7 a, 3	do.	29.32	SE	S, —	SW	SW, 11	Steady
do.	do.	do.	50 48 N	173 45 W	Mar. 4	2 a, 4	Mar. 5	29.75	W	W, —	W	W, 9	4 pts.
Kaikyu Maru, Jap. S. S.	Muroan	Port Alberni	49 39 N	179 25 E	Mar. 3	11 p, 3	Mar. 4	28.78	S	SE, 2	SW	WSW, 9	SE-S
Canadian Inventor, Br. S. S.	Victoria	Panama	39 17 N	124 04 W	Mar. 4	4 a, 4	Mar. 5	29.57	SE	SE, —	SW	SSE, 9	SE-S
Choyo Maru, Jap. S. S.	Seattle	Yokohama	51 53 N	166 22 E	Mar. 7	8 p, 7	Mar. 7	29.57	W	N, 6	W	W, 9	W-N
Olympia, Am. S. S.	Taku Bar	Seattle	45 49 N	164 20 E	Mar. 10	2 a, 10	Mar. 11	29.35	SE	S, 7	NW	SW, 9	SE-S-SW
Orion Maru, Jap. S. S.	Yokohama	Willapa	50 11 N	163 35 W	do.	Mid, 10	do.	29.89	SSW	SSW, 9	SW	SSW, 9	SSW-SW
Hakonesan Maru, Jap. M. S.	Vancouver	Yokohama	52 02 N	149 52 W	Mar. 11	6 a, 12	Mar. 12	29.89	SW	WNW, 7	WNW	WNW, 9	W-WNW